

## Patent Abstracts of Japan

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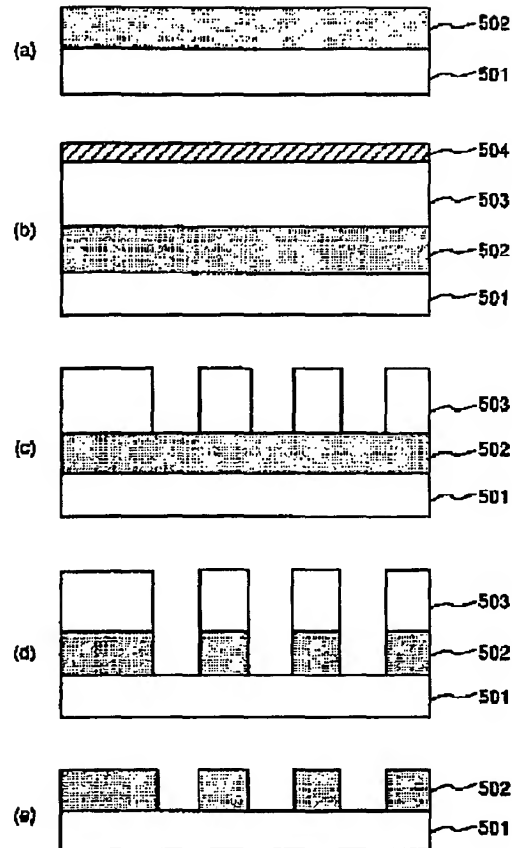
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TITLE : PRODUCTION OF MASK FOR  
EXPOSURE AND APPARATUS FOR  
PRODUCTION THEREFOR



ABSTRACT : PURPOSE: To provide a process for producing a mask for exposure capable of preventing the variations in physical properties of a phase shift film accompanying irradiation with exposing light or lapse of time and contributing to an improvement in the transfer accuracy of patterns.

CONSTITUTION: An SiN phase shift film 502 is formed on a transparent substrate 501 made of quartz and thereafter, the reforming and stabilizing treatment of the phase shift film 502 is executed by oxidizing the film in an ozone atmosphere without exposure of the phase shift film 502 to the atm. and further, uniformly irradiating the film with far UV rays by a low-pressure mercury lamp, by which the optical constant of the phase shift film 502 is adjusted to a desired phase difference and transmittance in the process for producing the mask for exposure having the phase shift film. A resist 503 is then applied on the phase shift film 502 and resist patterns are formed by exposing the resist 503. The exposed parts of the phase shift film 502 are then removed with the resist patterns as a mask.

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